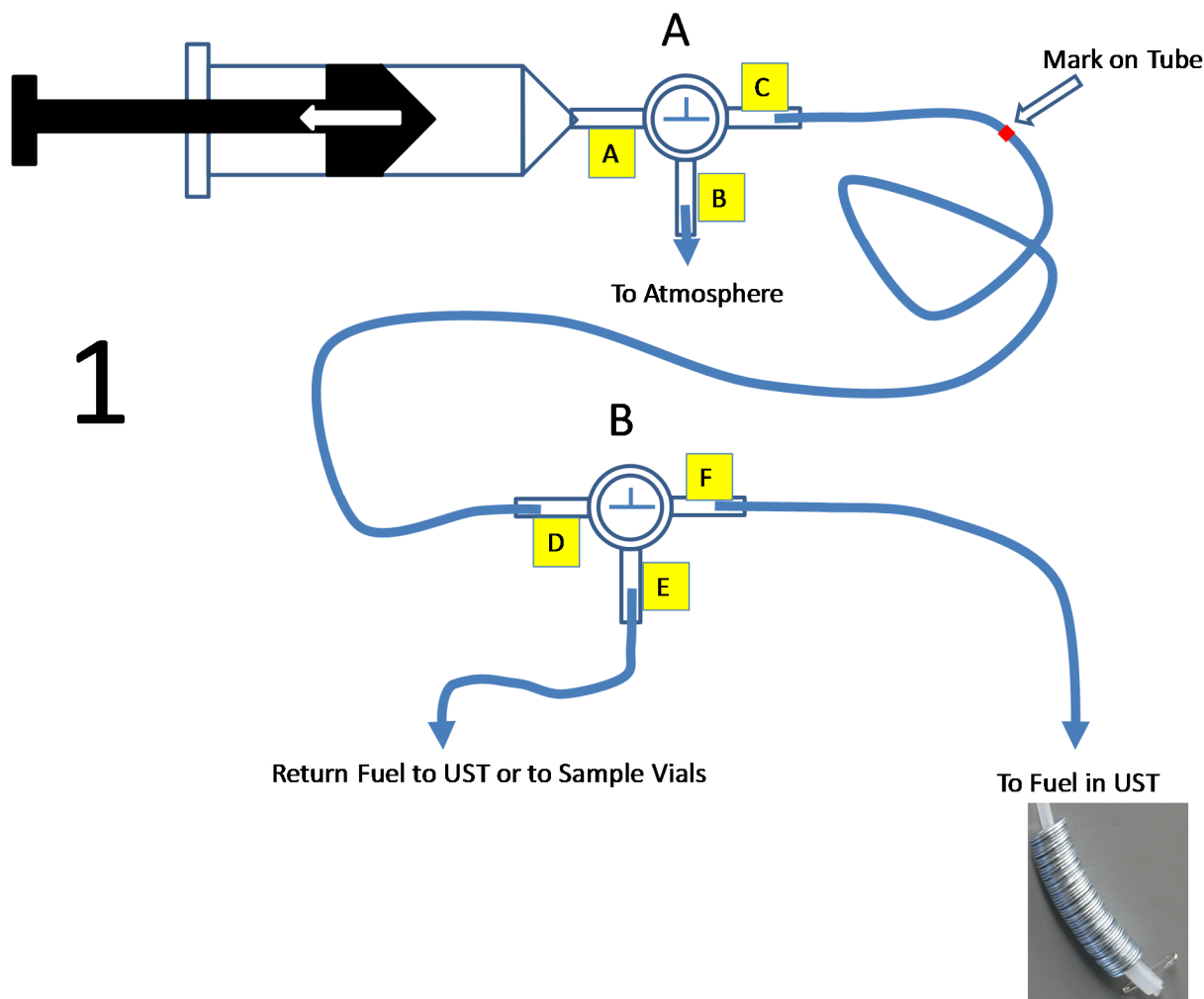


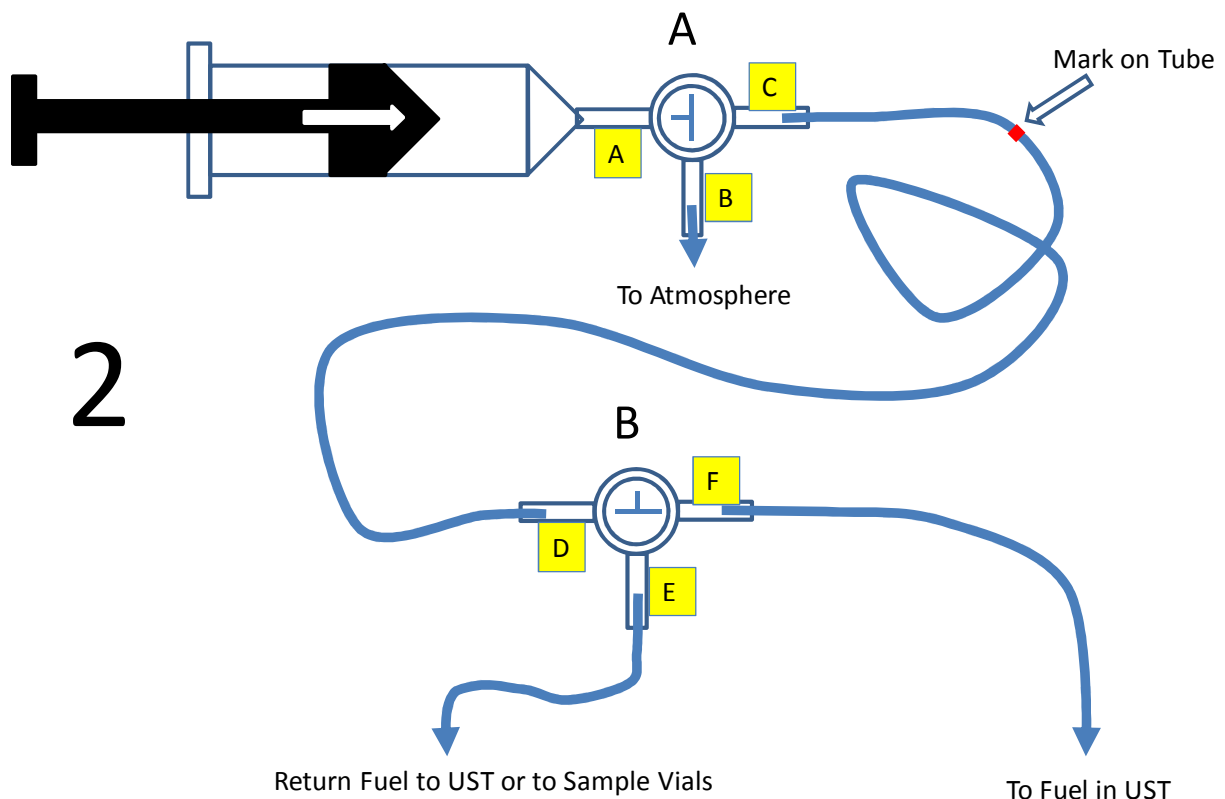
You are provided with an assembly comprised of valves A and B and the tubing that connects them, with spare valves, with a plastic syringe and a spare syringe, with washers and safety pins to make a weight on the end of a sampling tube, with a roll of polypropylene tubing, with a section of silicone tubing, and with scissors. In the black drum you are provided with sample vials, septa and crimp caps, and a crimping tool.

1) Connect a 60 ml plastic syringe with Luer Lock connection to port A of valve A. Valve A is assembled with two sections of silicone tubing attached to port A and port C. Attach syringe to port A with twist until you meet resistance.

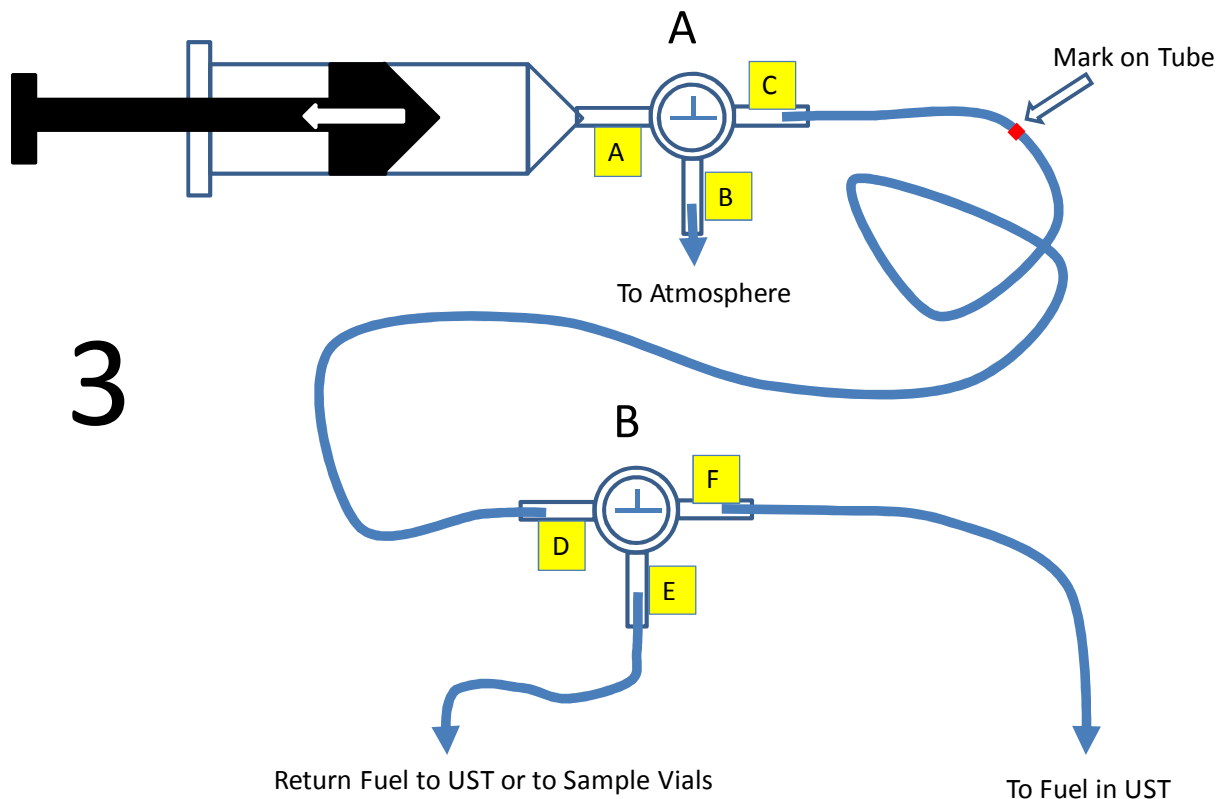
2) The polypropylene tubing is shipped on a roll, and it tends to retain its shape when unrolled. It will not hang straight in the UST. A set of steel washers are provided to act as a weight to straighten out the sampling tube. Add washers to the end of the polypropylene tubing that is on a roll. Slide the washers over the sampling tube. Cut a short section of silicone tubing and slide that up over the polypropylene tubing to hold the washers in place. Then push a safety pin through both the short piece of silicone tubing and the polypropylene sample tubing. See the illustration below. Then run the polypropylene tubing into the UST to be sampled. The end of the tubing should touch the bottom of the UST. The tubing and washers should not be lying on their side with the end of the tubing suspended above the bottom of the tank.



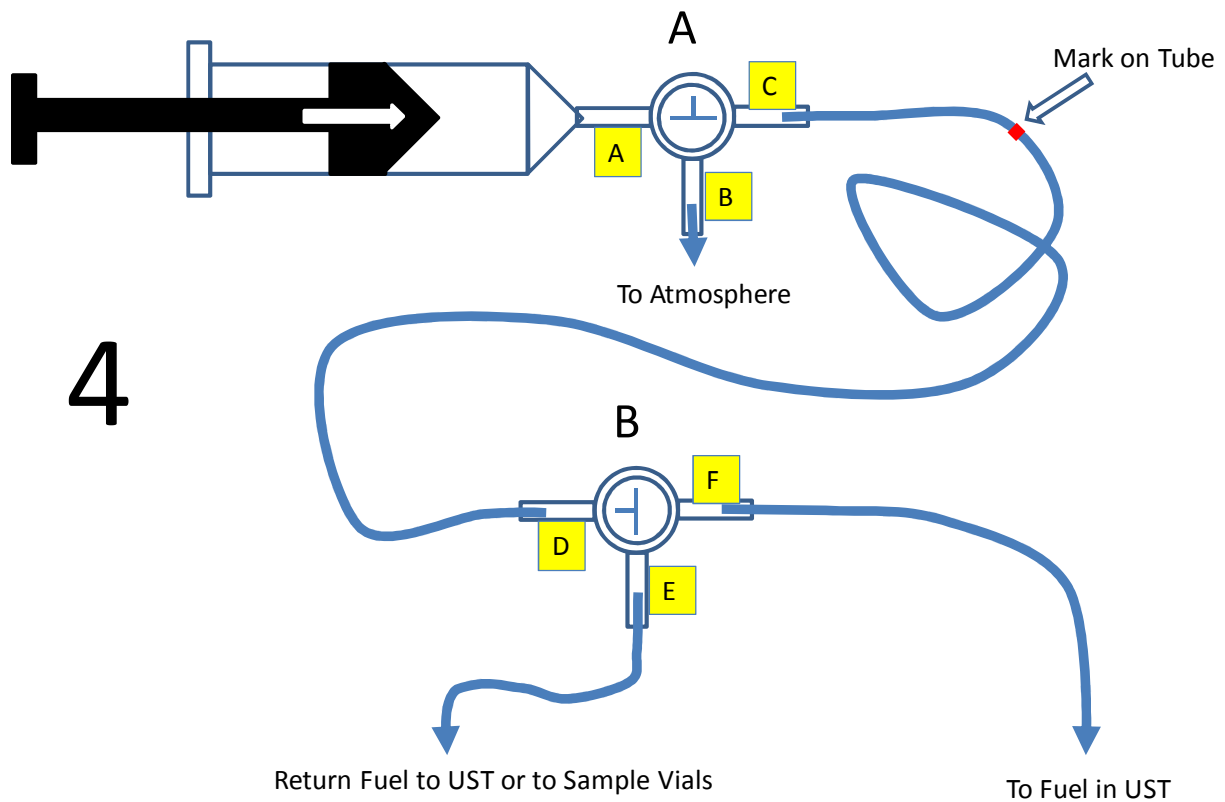
- 3) Cut the polypropylene tubing from the roll, allowing approximately 3 feet extra to attach to sampling device, and run the other end of the tubing through a handle of the ice chest. Use the tape to secure the tubing to the handle so there is no chance of losing the tubing into the UST.
- 4) Push the polypropylene tubing intended to sample the UST into port F of valve B. Valve B is assembled with 3 sections of silicone tubing attached to ports D, E, and F.
- 5) Cut another length of polypropylene tubing from the roll that will extend from valve B back into the UST. Push the end into port E of valve B.
- 6) Make sure the three way valves are configured as in Figure 1. Pull out the plunger to suck fuel into the sampling tube.
- 7) Configure valve A as in Figure 2, then push in the plunger to vent air to the atmosphere.



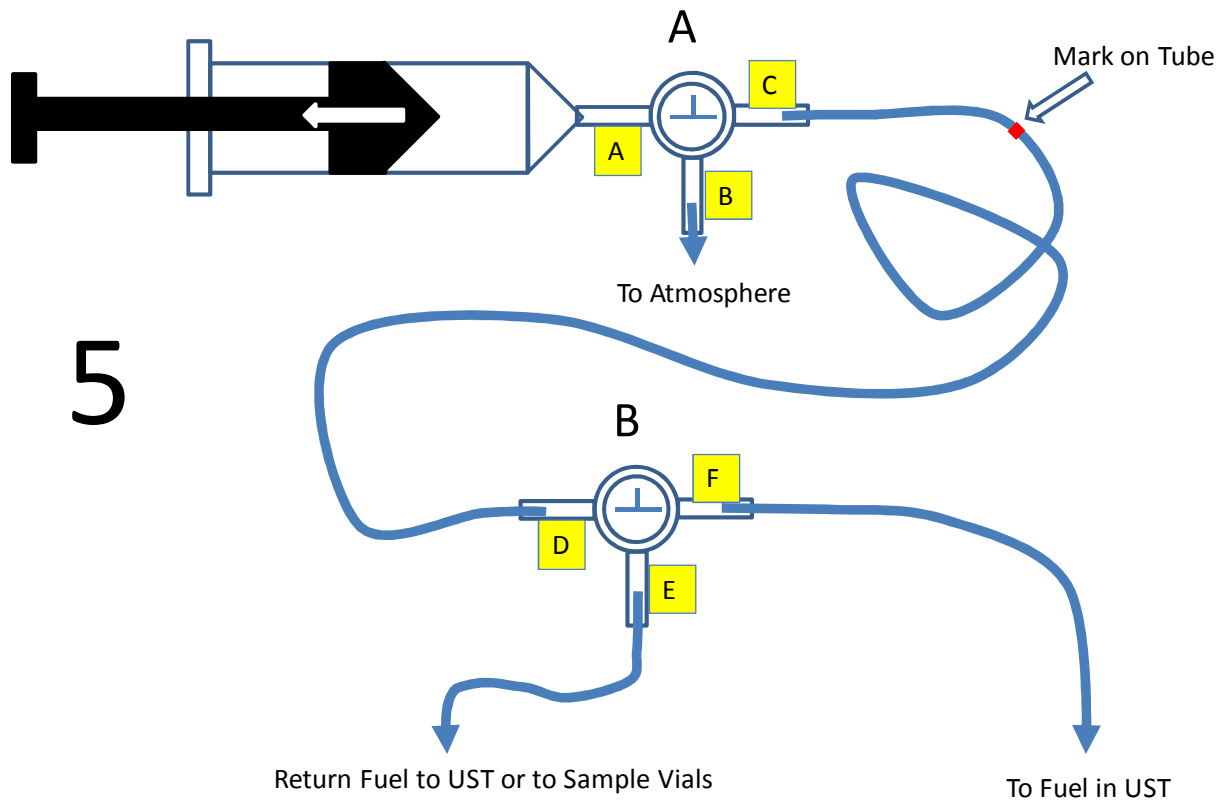
8) The tube that runs from valve B to valve A is 15 feet long. There is a mark on the tube that is 13 feet from valve B and 2 feet from valve A. When fuel reaches the mark, the tubing between valve B and valve A contains 40 ml of fuel. Repeat steps 6) and 7) until you pull fuel to the mark on the tube. Move the plunger in the syringe slowly to avoid pulling a high vacuum on the line. A high vacuum will cause the fuel to vaporize and form bubbles in the line.



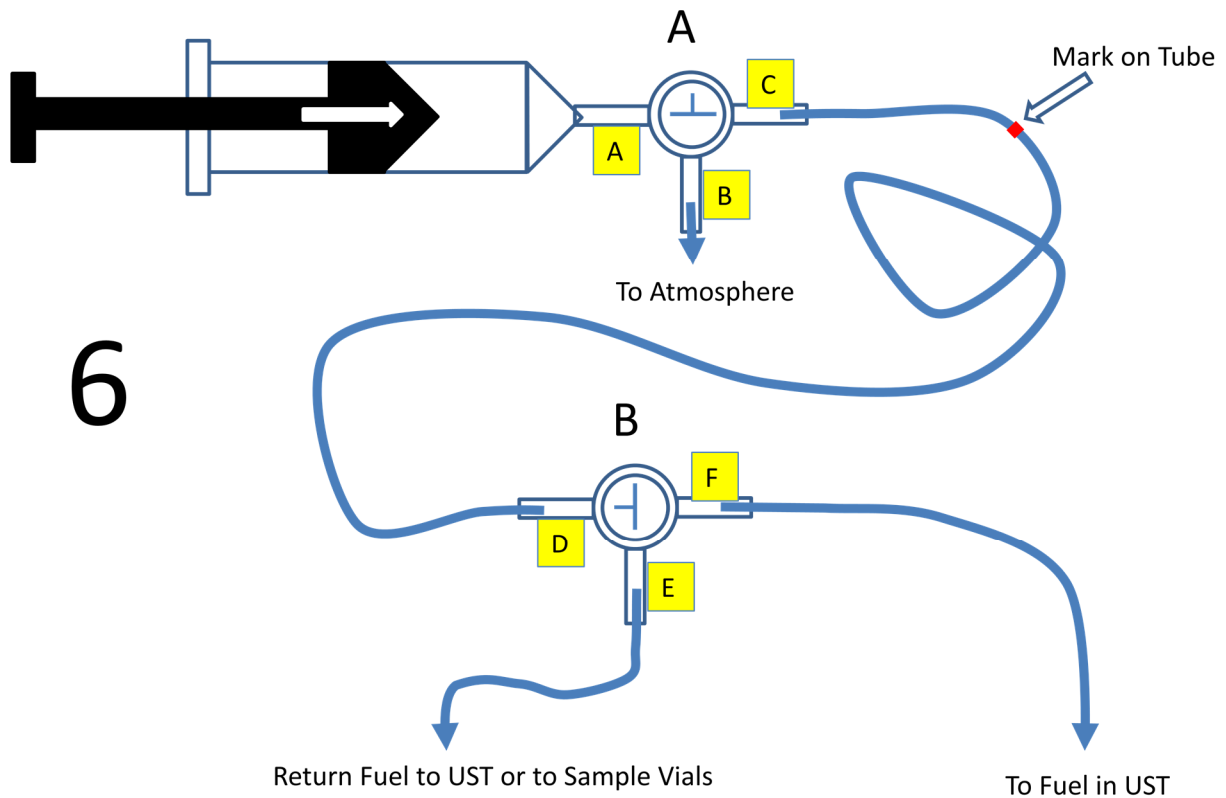
9) Configure valve A and B as in Figure 4. Depress the plunger to vent the fuel back into the UST. The purpose of this is to flush out the sampling system.



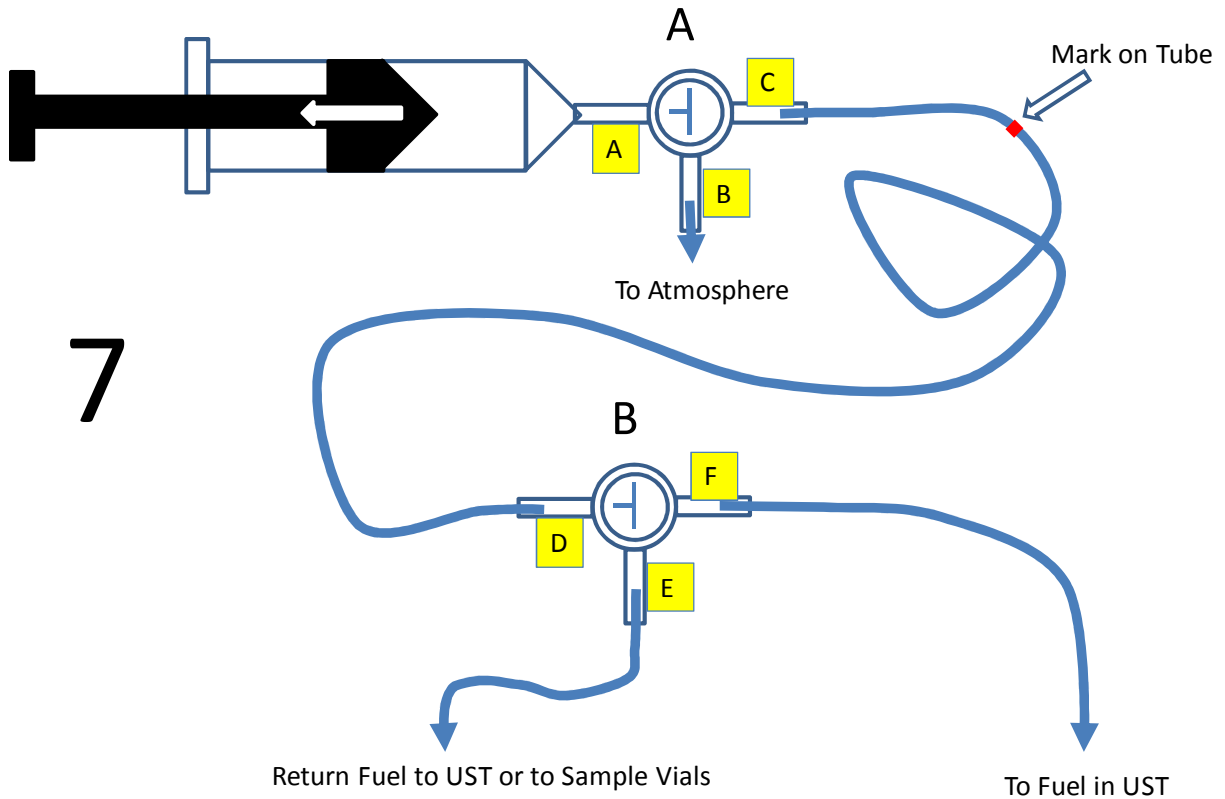
10) Configure valve B as in Figure 5. Pull out the syringe to fill the sampling tube to the mark. You may have to flush air from the syringe using the configuration in Figure 2,



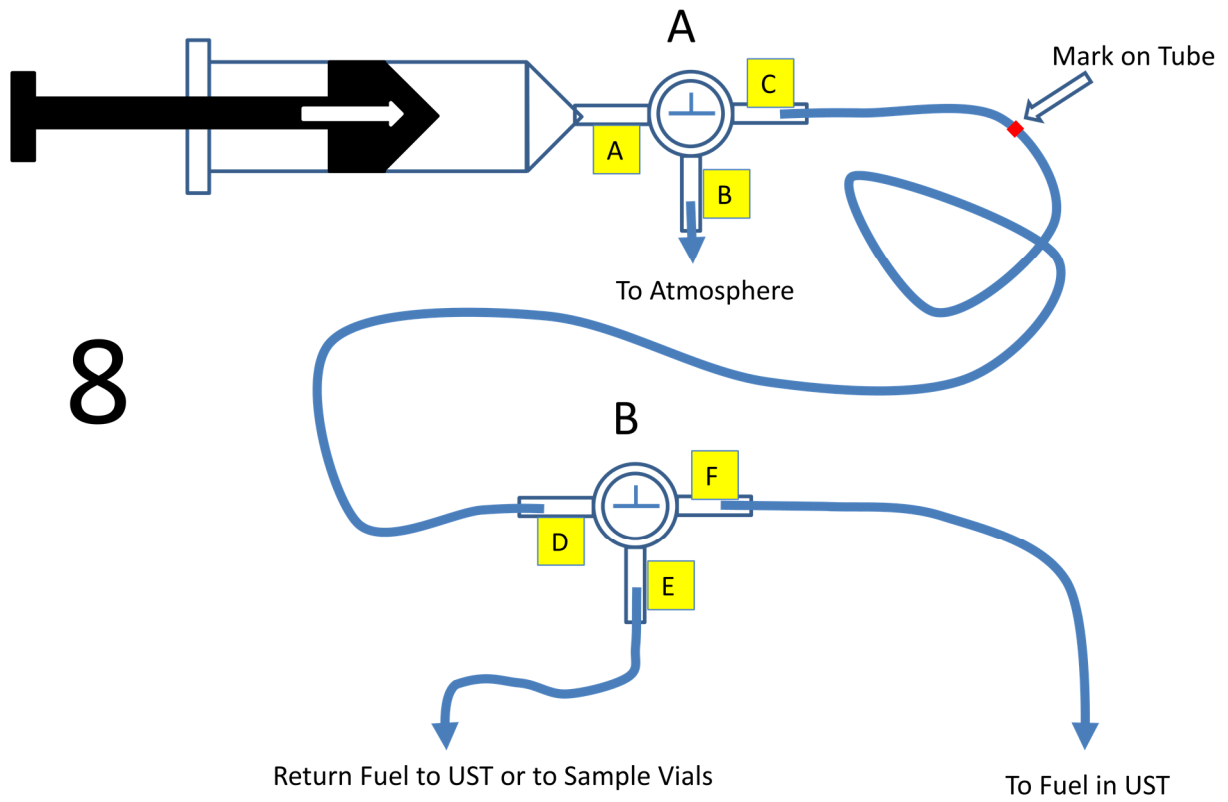
11). Configure the valves as in Figure 6. Pull the tube from port E from the UST and set it into a sample vial. There is a tube rack provided. Wedge sample vials in the rack so they will not tip over from the weight of the sampling tube. Depress the plunger to deliver the sample into the sample vials. The sample vials hold 25 ml. **Deliver no more than 20 ml to any particular sample vial.** There should be enough fuel in the sample tube to fill two vials. Seal the vials with a septum and crimp cap as soon as they are filled. Repeat the steps above to fill eight sampling vials. See the instructions in **Gasoline Sampling Protocol**.



12) After all the samples are taken; return the fuel in the sampling system back into the UST. Configure the valves as in Figure 7. Pull out the plunger to suck fuel from the line leading from port E into the line between valves A and B.



13). Then Configure the valves as in Figure 8. Push in plunger to push fuel back into the UST.

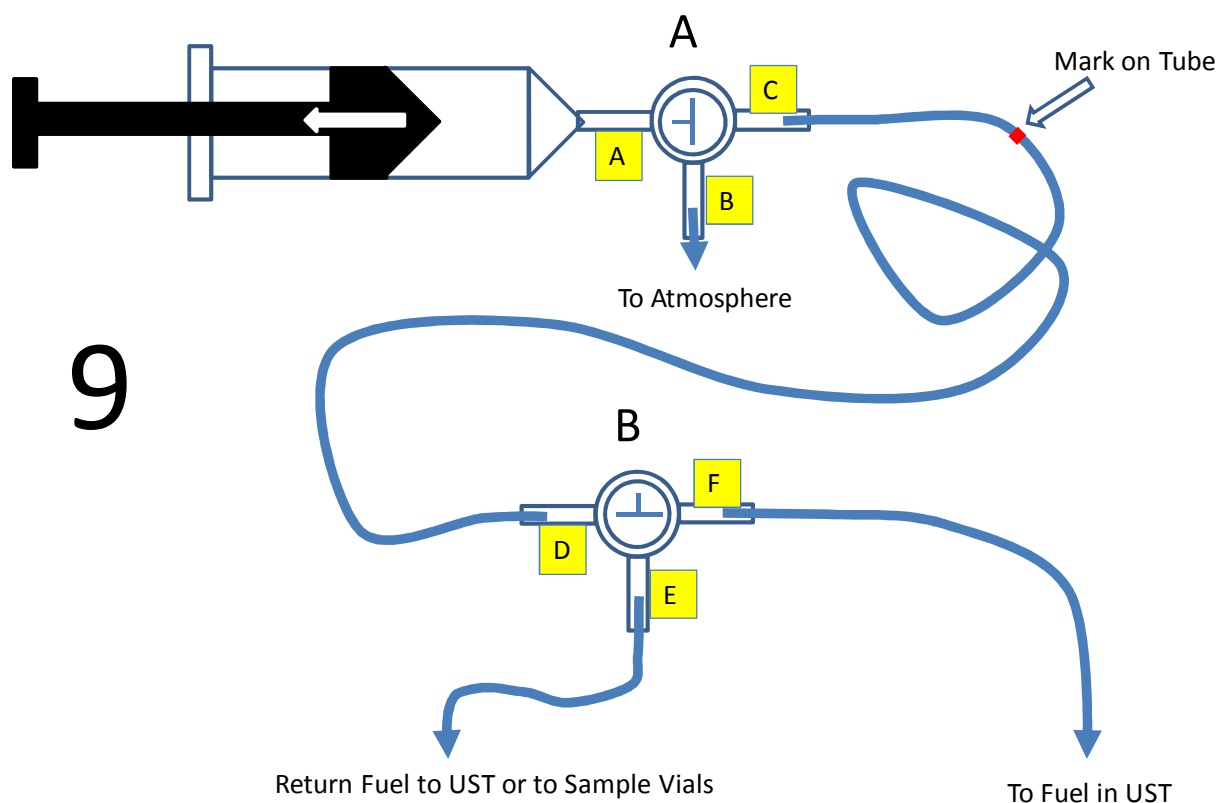


14) Configure the valves as in Figure 9. Pull out the plunger to fill the syringe with air.

15) Alternate back and forth between 13 and 14 until all the sampling tubes have been purged of fuel.

16) Recover the sampling tubes from the UST. Lay the tubing out in the sun and allow any gasoline on the outside of the tubing to evaporate. Once all the gasoline has evaporated, the tubing can be discarded. Do not ship the used tubing back to the Kerr Center.

Remove the silicone tubing section that holds the steel washers in place. Then lay the washers out in the sun and allow them to air dry on both sides before they are used to sample another UST or well, or before they are shipped back to the Kerr Center.



Please return unused tubing, crimpers, scissors and extra supplies to Kerr Lab in cooler provided. Thanks so much for your help.